ASHOKA MODEL UNITED NATIONS 2026

INTERNATIONAL ATOMIC ENERGY AGENCY

STUDY GUIDE

AGENDA

Strengthening Safety and Security Protocols under the Joint Convention: Managing Transboundary Impacts, Disputed Territories, and Ocean Release of Treated Radioactive Waste

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01 — UNDERSTANDING THE IAEA

WHAT IS THE IAEA?

The **International Atomic Energy Agency (IAEA)** is the United Nations' international organization for cooperation in the peaceful uses of nuclear energy.

Its work encompasses:

- nuclear safety;
- nuclear security;
- safeguards;
- nuclear science and technology;
- health;
- food and agriculture;
- energy;
- environmental protection;
- and technical cooperation.

Within the present agenda, the most relevant part of its mandate concerns **protecting people and the environment from harmful effects of ionizing radiation while enabling the safe use of nuclear technology**.

The IAEA develops international safety standards, provides technical assistance and facilitates international cooperation.

IAEA — Official Website

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02 — NUCLEAR SAFETY VS NUCLEAR SECURITY

These terms should not be used interchangeably.

NUCLEAR SAFETY

Primarily concerns preventing accidents and limiting radiological consequences.

Examples include:

- safe facility design;
- containment;
- waste management;
- radiation protection;
- emergency preparedness;
- and environmental monitoring.

NUCLEAR SECURITY

Concerns preventing, detecting and responding to theft, sabotage, unauthorized access or other malicious acts involving nuclear and radioactive material.

THE DISTINCTION

Safety → accidents and unintended events

Security → deliberate or malicious acts

The two systems nevertheless interact and should be coordinated.

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03 — THE JOINT CONVENTION

FORMAL NAME

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The Joint Convention entered into force on **18 June 2001**.

It is the first legally binding international treaty specifically addressing the safety of spent-fuel and radioactive-waste management.

Its objective is to achieve and maintain a high level of safety worldwide through:

- national measures;
- international cooperation;
- appropriate safety-related cooperation;
- and the establishment of effective national frameworks.

IAEA — The Joint Convention

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04 — THE CHARACTER OF THE JOINT CONVENTION

The Joint Convention is an **incentive convention**.

Its implementation is based heavily on:

- national responsibility;
- peer review;
- national reporting;
- international cooperation;
- transparency;
- and continuous improvement.

The Convention does **not** establish a supranational nuclear regulator that directly operates or controls national facilities.

Instead:

> **States retain primary responsibility for establishing and enforcing their own regulatory systems.**

The IAEA provides the international framework, standards and mechanisms for cooperation and review.

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05 — SCOPE OF APPLICATION

The Joint Convention applies to the safety of:

SPENT FUEL MANAGEMENT

where spent fuel results from civilian nuclear reactors.

RADIOACTIVE WASTE MANAGEMENT

where radioactive waste results from civilian applications.

It also contains provisions concerning certain discharges.

The Convention generally does **not** apply to radioactive waste from military or defence programmes unless the material is transferred permanently into and managed within an exclusively civilian programme, or otherwise declared for Convention purposes by the Contracting Party.

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06 — WHAT IS RADIOACTIVE WASTE MANAGEMENT?

The Convention defines radioactive waste management broadly.

It includes activities such as:

- handling;
- pretreatment;
- treatment;

- conditioning;
- storage;
- disposal;
- and certain discharges.

Off-site transportation is treated separately under the Convention's transboundary-movement provisions.

IMPORTANT DISTINCTION

Storage ≠ disposal

STORAGE

Material is held with the intention that it may be retrieved.

DISPOSAL

Material is placed in a facility or location without the intention of retrieval.

This distinction is fundamental to long-term waste policy.

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07 — THE RADIOACTIVE WASTE MANAGEMENT CHAIN

A simplified management pathway is:

Generation

↓

Characterisation

↓

Pretreatment

↓

Treatment

↓

Conditioning

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Storage

↓

Disposal

The exact pathway depends on the nature and characteristics of the waste.

The IAEA stresses that radioactive-waste management should ultimately provide for a safe disposal solution rather than treating indefinite storage as the final objective.

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08 — FUNDAMENTAL RESPONSIBILITY

The Joint Convention places responsibility primarily on **Contracting Parties**.

States are expected to establish:

- appropriate legislation;
- regulatory systems;
- competent regulatory bodies;
- national waste-management programmes;
- and appropriate safety requirements.

The IAEA's regulatory framework guidance identifies Article 19 of the Joint Convention as requiring Contracting Parties to establish and maintain a legislative and regulatory framework governing radioactive-waste and spent-fuel safety.

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09 — INDEPENDENT REGULATORY OVERSIGHT

An effective national framework requires a competent regulatory body.

Its functions can include:

- licensing;
- inspection;
- enforcement;
- assessment;
- monitoring;
- and communication with affected stakeholders.

The IAEA Safety Standards emphasise that regulatory bodies should possess appropriate legal authority, competence and independence from organisations responsible for promoting or operating regulated activities.

WHY THIS MATTERS

A regulator cannot effectively enforce safety standards if it is structurally unable to act independently.

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10 — DEFENCE IN DEPTH

Nuclear safety relies on **multiple independent layers of protection**.

The principle of defence in depth means that safety should not depend on a single barrier or system.

Protection may involve:

facility design

-

physical barriers

-

monitoring

-

operational controls

-

regulatory oversight

-

emergency preparedness

This ensures that failure at one level does not automatically result in harmful consequences.

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11 — SAFETY AS A CONTINUOUS PROCESS

Radioactive-waste management involves hazards that can persist over very long periods.

Consequently, states must consider:

- long-term containment;
- degradation of facilities;
- groundwater;
- environmental pathways;
- human intrusion;
- climate-related changes;
- monitoring;
- institutional continuity.

The relevant question is not simply:

> **“Is the waste safe today?”**

It is:

> **“Can safety be maintained throughout the relevant lifetime of the facility and waste?”**

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12 — TRANSBOUNDARY MOVEMENT

Article 27 of the Joint Convention specifically addresses the transboundary movement of spent fuel and radioactive waste.

Three categories are particularly important:

STATE OF ORIGIN

The state from which the movement originates.

STATE OF TRANSIT

A state through whose territory the material passes.

STATE OF DESTINATION

The state to which the material is being transported.

These definitions are expressly incorporated into the Convention.

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13 — ARTICLE 27

Article 27 requires Contracting Parties involved in a transboundary movement to take appropriate steps to ensure that the movement complies with the Joint Convention and other applicable binding international instruments.

For a movement to a State of destination:

PRIOR NOTIFICATION

and

CONSENT OF THE STATE OF DESTINATION

are required.

The destination state should consent only when it has:

- administrative capacity;
- technical capacity;
- and an appropriate regulatory structure

to manage the material safely.

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14 — RESPONSIBILITY OF THE STATE OF ORIGIN

The State of origin must ensure that the proposed movement is properly authorised.

It must also satisfy itself that the destination state's requirements are met before the movement takes place.

If a movement cannot be completed in accordance with Article 27, the State of origin must take appropriate steps to permit the material to return to its territory unless another safe arrangement can be made.

CORE PRINCIPLE

A state cannot simply export radioactive waste and abandon responsibility when circumstances change.

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15 — STATE OF TRANSIT

The Convention provides that movement through transit states is subject to the international obligations applicable to the particular mode of transport.

This means the regulatory framework also intersects with:

- maritime law;
- transport safety;
- international shipping;
- aviation where applicable;
- and other relevant international instruments.

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16 — INTERNATIONAL TRANSPORT SAFETY

The IAEA's **Regulations for the Safe Transport of Radioactive Material** provide the international technical framework for the safe transport of radioactive material.

The current IAEA Safety Standards collection includes:

SSR-6 (Rev. 2), Regulations for the Safe Transport of Radioactive Material, 2025 Edition.

The framework addresses issues including:

- package design;
- containment;
- radiation protection;
- operational controls;
- compliance assurance;
- and emergency preparedness.

IAEA — Regulations for the Safe Transport of Radioactive Material

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17 — TRANSBOUNDARY IMPACTS

Radioactive contamination does not necessarily respect political borders.

Potential pathways include:

- atmospheric dispersion;
- ocean currents;
- rivers;
- groundwater;
- food chains;
- marine ecosystems;
- and cross-border transport.

Therefore:

> **A national decision can create consequences outside national territory.**

This makes international notification, monitoring and information-sharing essential.

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18 — ENVIRONMENTAL MONITORING

A credible radioactive-waste management system requires monitoring capable of detecting changes in:

- radiation levels;
- marine environments;
- groundwater;
- soil;
- food chains;
- and relevant ecological indicators.

Monitoring should ideally establish:

BASELINE DATA

conditions before an activity occurs,

followed by

OPERATIONAL MONITORING

during the activity,

and

LONG-TERM MONITORING

where appropriate.

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19 — EMERGENCY PREPAREDNESS

A state must prepare not only for normal operations but also for abnormal events.

Potential scenarios include:

- transportation accidents;
- facility failures;
- unexpected releases;
- natural disasters;
- loss of containment;
- or security incidents.

The IAEA Safety Standards require governments to establish arrangements for safe radioactive-waste management and for emergency preparedness in relevant activities.

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20 — DISPUTED TERRITORIES

One of the most complex elements of this agenda concerns radioactive material located in or transported through **territories whose status or control is disputed**.

This can produce uncertainty concerning:

- which authority regulates the facility;
- which state is legally responsible;
- who performs inspections;
- who receives international notifications;
- who controls emergency response;
- and which regulatory standards apply.

THE CENTRAL PROBLEM

Nuclear safety cannot simply stop functioning because political sovereignty is contested.

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21 — REGULATORY CONTINUITY

Where jurisdiction is disputed, the priority should remain:

CONTINUITY OF SAFETY OVERSIGHT

This requires consideration of:

- technical monitoring;
- secure access for inspectors;
- reporting channels;
- emergency communication;
- continuity of records;
- radioactive-material inventories;
- and arrangements preventing regulatory gaps.

The IAEA's role is principally technical and cooperative; it does not itself determine territorial sovereignty.

Therefore, an effective framework should separate:

POLITICAL STATUS

from

TECHNICAL SAFETY REQUIREMENTS

without prejudicing the underlying territorial dispute.

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22 — SAFETY IN AREAS OF POLITICAL INSTABILITY

Nuclear and radioactive-waste facilities can face additional risks where:

- government institutions are disrupted;
- infrastructure is damaged;
- regulatory personnel cannot access facilities;
- supply chains are interrupted;
- or emergency response systems are weakened.

This reinforces the need for:

- contingency planning;
- redundant communication systems;
- secure information management;
- international technical assistance;
- and continuity plans for regulatory oversight.

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23 — RADIOACTIVE DISCHARGES

The term **“release”** must be handled carefully.

A radioactive discharge may refer to an **authorised release of radioactive substances into the environment under controlled conditions and regulatory limits**.

That is conceptually different from:

ACCIDENTAL RELEASE

which occurs unintentionally,

and

DUMPING / DISPOSAL AT SEA

which is governed by separate international rules.

This distinction is essential when discussing ocean-related radioactive material.

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24 — TREATED RADIOACTIVE WASTE

Treatment can reduce the quantity or concentration of radioactive material requiring management and can alter the physical or chemical characteristics of waste.

However:

> **Treatment does not automatically mean that all radioactive material disappears.**

Consequently, decisions concerning any discharge must consider:

- radionuclides;
- concentration;
- total activity;
- environmental pathways;
- dose;
- marine ecosystems;
- cumulative effects;
- monitoring;
- and applicable international obligations.

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25 — OCEAN RELEASE VS OCEAN DUMPING

These should **not** be conflated.

CONTROLLED DISCHARGE

A regulated release of liquid or gaseous effluents under authorised conditions.

DUMPING AT SEA

Deliberate disposal of wastes or other matter at sea.

The legal regimes governing these activities are different.

The London Convention and London Protocol are particularly relevant to dumping at sea.

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26 — LONDON CONVENTION AND LONDON PROTOCOL

The **Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972**, commonly known as the **London Convention**, establishes an international framework concerning dumping at sea.

The **1996 London Protocol** significantly strengthened the regime by adopting a more restrictive approach to dumping.

Historically, the London Convention banned the disposal at sea of high-level radioactive waste in 1975, while international rules subsequently prohibited ocean disposal of low- and intermediate-level radioactive waste as well.

IMPORTANT FOR DELEGATES

Do not automatically classify a controlled liquid discharge from a nuclear facility as “ocean dumping.”

The legal character of the activity matters.

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27 — THE IAEA'S ROLE IN MARINE RADIOLOGICAL PROTECTION

The IAEA has technical responsibilities and expertise relating to radiological assessment of materials considered for disposal at sea under the London Convention framework.

IAEA methodologies have been developed for assessing whether radioactive residues in materials proposed for disposal at sea would result in negligible radiological impacts.

Such assessments consider protection of:

- workers;
- members of the public;
- flora;
- fauna;
- and the marine environment.

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28 — OCEAN CURRENTS AND TRANSBOUNDARY IMPACTS

Marine environments create a particularly difficult regulatory problem.

Water movement can carry dissolved substances across:

- territorial seas;
- exclusive economic zones;
- regional seas;
- and international waters.

Therefore, environmental assessment should consider:

SOURCE

Where does the material originate?

PATHWAY

How can it move through the marine environment?

RECEPTOR

Which populations or ecosystems could be affected?

DOSE / IMPACT

What radiological consequences could result?

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29 — SCIENTIFIC ASSESSMENT

Ocean-related decisions require more than political assurances.

Scientific assessment may consider:

- radionuclide characteristics;
- physical and chemical behaviour;
- dispersion;
- dilution;
- sediment interactions;
- bioaccumulation;
- marine food chains;
- exposure pathways;
- and cumulative impacts.

The IAEA has supported research and environmental surveillance concerning radionuclide transport, oceanography and marine ecosystems.

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30 — TRANSPARENCY AND PUBLIC CONFIDENCE

Radioactive-waste decisions can generate significant public concern.

The Joint Convention's review system is therefore important not only as a technical mechanism but also as a transparency mechanism.

The IAEA describes the Convention as fostering:

- transparency;
- international cooperation;
- and public confidence.

Public communication should provide:

- understandable scientific information;
- monitoring results;
- regulatory decisions;

- emergency information;
- and opportunities for stakeholder consultation.

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31 — THE JOINT CONVENTION REVIEW PROCESS

Contracting Parties submit **national reports** describing how they implement their obligations.

These reports are examined through a peer-review process during meetings of Contracting Parties.

The process allows states to:

- ask questions;
- identify challenges;
- exchange experience;
- highlight good practices;
- and receive scrutiny from other Contracting Parties.

The Convention therefore relies heavily on **peer review rather than supranational enforcement**.

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32 — PEER REVIEW AS A SAFETY MECHANISM

Peer review can identify:

- weaknesses in national legislation;
- gaps in regulatory capacity;
- inadequate monitoring;
- emergency-preparedness weaknesses;
- and areas requiring further development.

This creates an important cycle:

National implementation

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National report

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International peer review

↓

Questions and recommendations

↓

National improvement

↓

Next review cycle

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33 — INFORMATION SHARING

For transboundary radioactive-waste management, states should consider mechanisms for exchanging:

- waste inventories;
- transport information;
- monitoring results;
- emergency notifications;
- environmental data;
- regulatory decisions;
- and scientific assessments.

The objective is not simply greater information.

It is:

TIMELY + RELIABLE + COMPARABLE INFORMATION

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34 — INTERNATIONAL COOPERATION

The Joint Convention explicitly recognises international cooperation as an important component of achieving high safety standards.

Cooperation can involve:

- technical assistance;
- regulatory cooperation;
- peer review;
- scientific research;
- emergency preparedness;
- capacity building;
- and information exchange.

Developing states may require additional assistance to establish:

- regulatory infrastructure;
- laboratories;
- monitoring systems;
- trained personnel;
- and long-term waste-management programmes.

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35 — CAPACITY BUILDING

A global safety regime cannot depend exclusively on the capabilities of the most technologically advanced states.

Capacity building may include:

REGULATORY

Training inspectors and regulators.

SCIENTIFIC

Developing analytical and monitoring capacity.

TECHNICAL

Improving waste characterisation and management.

EMERGENCY

Developing response systems and exercises.

INSTITUTIONAL

Strengthening national legislation and regulatory institutions.

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36 — SECURITY CONSIDERATIONS

Radioactive material also presents security concerns.

States should maintain systems to prevent:

- unauthorized access;
- theft;
- loss of control;
- sabotage;
- and unauthorized transfer.

The IAEA's broader safety-and-security framework stresses coordination between safety and security arrangements for radioactive sources and materials.

CORE PRINCIPLE

A waste-management facility must be:

safe from accidents

and

secure against malicious acts.

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37 — LONG-TERM LIABILITY AND RESPONSIBILITY

Radioactive-waste management raises an unusual governance question:

Who remains responsible decades or centuries after the waste was generated?

A robust national framework should address:

- institutional continuity;
- financial provisions;
- record preservation;
- monitoring;
- maintenance;
- environmental protection;
- and eventual closure of facilities.

The existence of a long-term hazard requires long-term institutional planning.

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38 — THE CENTRAL POLICY DILEMMAS

DILEMMA I — NATIONAL SOVEREIGNTY VS TRANSBOUNDARY SAFETY

How far can a state make decisions within its territory when those decisions may affect neighbouring states?

DILEMMA II — SCIENCE VS PUBLIC PERCEPTION

How should states respond when scientific assessments indicate low radiological risk but neighbouring populations remain concerned?

DILEMMA III — STORAGE VS DISPOSAL

Should states rely on prolonged storage or accelerate development of permanent disposal solutions?

DILEMMA IV — ACCESS VS SECURITY

How can transparency and international inspection coexist with the protection of sensitive nuclear information?

DILEMMA V — POLITICAL DISPUTES VS TECHNICAL SAFETY

How can safety oversight continue when territorial authority is contested?

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39 — IMPLEMENTATION CHALLENGES

A strong international framework may still encounter:

- differences in national legislation;
- varying technical capabilities;
- limited financial resources;
- political disputes;
- public opposition;
- incomplete environmental data;
- inconsistent monitoring standards;
- gaps in emergency coordination;
- and differences in interpretation of international obligations.

Therefore, strengthening the system requires both:

COMMON INTERNATIONAL STANDARDS

and

NATIONAL IMPLEMENTATION CAPACITY.

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40 — DRAFTING FRAMEWORK

A comprehensive resolution may address:

I. NATIONAL REGULATORY FRAMEWORKS

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II. TRANSBOUNDARY MOVEMENT

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III. ENVIRONMENTAL MONITORING

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IV. DISPUTED TERRITORIES

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V. OCEAN-RELATED DISCHARGES

↓

VI. MARINE ENVIRONMENTAL PROTECTION

↓

VII. EMERGENCY PREPAREDNESS

↓

VIII. TRANSPARENCY AND DATA SHARING

↓

IX. PEER REVIEW

↓

X. CAPACITY BUILDING

↓

XI. INTERNATIONAL COOPERATION

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43 — OFFICIAL RESOURCE BANK

IAEA — MAIN WEBSITE

International Atomic Energy Agency

JOINT CONVENTION

IAEA — Joint Convention

JOINT CONVENTION TEXT

IAEA — Joint Convention Full Text

IAEA SAFETY STANDARDS

IAEA — Safety Standards and Regulatory Framework

SAFE TRANSPORT OF RADIOACTIVE MATERIAL

IAEA — SSR-6 (Rev. 2), 2025 Edition

RADIOACTIVE WASTE AND SPENT FUEL

IAEA — Radioactive Waste and Spent Fuel Management

IAEA PUBLICATIONS

IAEA — Radioactive Waste and Spent Fuel Publications

LONDON CONVENTION AND LONDON PROTOCOL

International Maritime Organization — London Convention and Protocol